

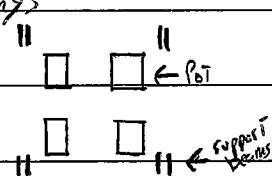
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Basement Inventory / Pot Shed

and Bulk Storage

The basement below the potlines contains alumina dust, pot spills, and miscellaneous batch material. The inventory of the alumina in the basement is calculated by Nino Berube - Engineering Operations supervisor, along with one subordinate Ron Novich. The basement has been divided into 4 pot bays



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Nino has determined the total area of each one of these "bays" by measuring the distance between the support beams. Each one of the potline rooms is divided into numerous of these bays. Both Nino and Ron go through each bay and estimate the amount of alumina on the floor in each bay. For example they may estimate that the alumina in bay 1 rises on average $\frac{1}{4}$ inch off the floor. Thus knowing the height of the alumina and the area of the bay they can determine the square feet of alumina in the bay. Based on laboratory tests, Columbia Falls uses a 64 pounds per cubic foot and thus they calculate the pounds of alumina in each group of 5 bays and foot total pounds in the basement. In addition, to this, there are numerous piles or spills of alumina and batch. The alumina in the piles is calculated separately. Nino estimates the number of 500# boxes the material in the pile would fill. (he has witnessed and helped fill hundreds of the boxes so he feels he can estimate the number of boxes the material would fill) The density of the material is 64 ft^3 and a 65% recovery rate is assumed based on historic yields. (ie. $500\text{# box} \times 65\% = 3250\text{# alumina}$)

The amount of alumina in the Pot shed and "Pad" are also calculated by Nino and Ron. The Pot shed is at the back of the plant and contains the material collected

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from the basement. This material is then put through a sifter to separate the alumina and is then put into the sweeping tanks. Currently however, the sweeping tanks are almost full and some of the sifted alumina is being held in a staging area called the polished pad. The unsifted material in the pole shed, like the piles of material in the basement, is determined to have a 65% yield. The sifted material is calculated to have an 80% yield. The area in the polished has been determined and by filling the shed to a consistent height throughout the total pounds can be estimated (again assuming $64\text{ ft}^3/\text{ft}^3$ and 65% alumina yield). The Pole Shed Pad is a little less scientific as the sifted alumina is in a large pile of relatively consistent height. The dimensions of the pile are estimated and based on $64\text{ ft}^3/\text{ft}^3$ the pounds are determined, with 20% netted out for an 80% yield.

Conclusions

The entire basement inventory which includes the pole shed and pad calculated for the 11/83 physical was 2.3 m^3 which represents about 2.4% of the total alumina inventory. I believe the methodology for calculating the inventory, although not exacting, is rational and appears to provide a reasonable estimate of the alumina on hand. The only question I have was in using a $64\text{ ft}^3/\text{ft}^3$ density figure. In the silos the loose pack density is $61.28\text{ ft}^3/\text{ft}^3$ and in walking through the basement I would say that the alumina would tend to be more loose pack than drage. However, the impact is insignificant to the total inventory. If the basement inventory was off 40% it would only change the overall inventory 1%.

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Bulk Storage

The Columbia Falls plant is a party to an alumina contract that contains a "take or pay" provision. As a result they are required to purchase a given amount of alumina whether they need

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The material or not. With the Columbia Falls plant operating at only 40% capacity for much of late 1982 and early 1983, the on plant silos quickly filled with alumina. As a result, additional storage space was needed to store the alumina and a storage building was constructed. The alumina was in the storage buildings for the 1983 September physical. For the 11/83 physical the alumina was transferred by truck to the silo's and the transfer was to be fully completed by the November inventory.

My inspection of the storage buildings disclosed that one has not been entirely cleared of alumina. The two engineers accompanying me on the inspection estimated that the buildings contained between 50-75,000#. Employees in the building were still in the process of moving the alumina. However, my inspection was after the inventory had been taken.

During interviews with engineers -Don Ryan, and Transportation and Alumina administrator -Syr Ercleson- it was disclosed that anywhere from 1-2% dust loss occurred in loading, moving, and unloading the alumina between the storage buildings and the silo's. On some days they said there was a virtual "white out" between the buildings and the silos with the trucks going back and forth. Based on a book value of approximately \$2 million pounds the loss could be anywhere between \$20 thousand and 1.04 million pounds.

Jerry Miller - Financial Manager - indicated that the loss would not be captured in an adjusting entry (ie adjust the books) but would be assumed to be part of the overall discrepancy between book and physical. The reasoning being that you can't definitively say the loss was 1% or 1.5%, so the loss will be assumed as part of any discrepancy between book and actual.

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